

# Information and Communication Technology Skills

## Introduction

Information and Communication Technology, called ICT in short, has become an integral part of our life. One must develop the ability to use digital technology and communication tools to access, manage, integrate, evaluate, create and communicate. In this Unit, you will learn about how to use spreadsheets and make presentations using a software.

# Session 1: Getting Started with Spreadsheet

How do people generally maintain their expenses? They write down all expenses, such as school fee of their children; grocery, gas and electricity bills; money spent on festivals and clothes, etc., in a diary. Then, they note down how much was spent on each item. Finally, the total is calculated to find out how much they have spent in a month. But nowadays, people who know how to use a computer can use software to maintain an account of their expenses.

Let us now learn about spreadsheets, which are used for doing calculations on a computer.

A spreadsheet is an electronic document, which has rows and columns. It is used to store data in a systematic way and do calculations. For example, a grocery shop has many items. The shopkeeper keeps a track of the total quantity of each item, quantity sold, cost and selling price of each item, etc. All these details can be maintained using a spreadsheet as shown in Table 3.1. It will also help the shopkeeper do difficult calculations easily, such as finding out profit or loss.

Table 3.1: Goods in a grocery store

Item	Total quantity (kg)		Quantity left (kg)	Cost ₹/kg	Selling price ₹/kg
Wheat atta	250	115	135	28	31
Rice	160	57	103	46	50
Arhar daal	70	45	25	60	68
Sugar	200	145	55	40	45

Having understood what spreadsheets are, let us now understand the types of spreadsheet.

# Types of spreadsheet

There are many types of spreadsheet available that have been created by different companies. Some of the most popular ones are given in Figure 3.1.

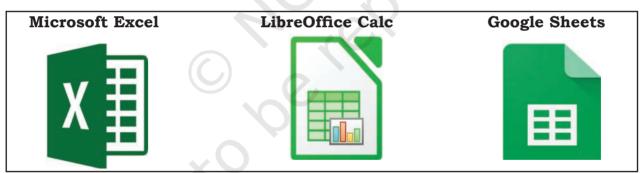


Figure 3.1: Popular spreadsheet software

In this Session, we will be learning how to use LibreOffice Calc. Most functions in different spreadsheets are same. If you know how to use one, you can easily use any other spreadsheet.

# Steps to start LibreOffice Calc

1. The first thing you need to ensure is that LibreOffice must be installed on your computer.

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- 2. Type LibreOffice Calc in the search bar of Windows.
- 3. Select LibreOffice Calc from the search results as shown in Figure 3.2. LibreOffice Calc will open a blank sheet as shown in Figure 3.3.
- 4. You can start typing and entering data as soon as you open the spreadsheet. However, to start using the spreadsheet, first you need to understand the components of a spreadsheet.

# Components of a spreadsheet

In the spreadsheet, you can see a worksheet with cells placed in rows and columns. Now, let us learn what these are.

- 1. A **row** is an arrangement of cells in a horizontal (sleeping) manner. As shown in Figure 3.4, all marks for maths are in row number 3.
- 2. A **column** is an arrangement of cells in a vertical (standing) manner. As shown in Figure 3.4, Rajvir's marks are in column B.

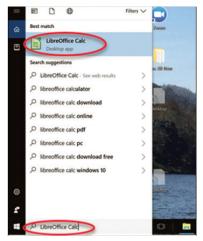
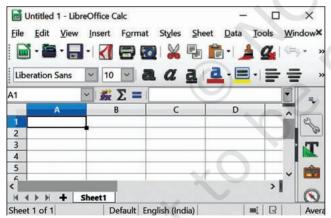
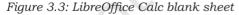


Figure 3.2: Select LibreOffice Calc from the search results





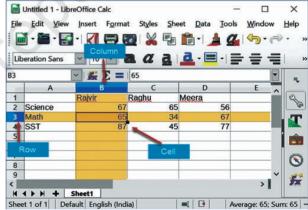


Figure 3.4: Rows and columns in a spreadsheet

3. A **cell** is a rectangle shaped box, where the row and column meet. You can enter text, numbers, date, formula, etc., in a cell. The cell that is selected appears highlighted. In Figure 3.4, the selected cell is B3 — the cell in column B on row 3 — and it contains Rajvir's marks for maths.

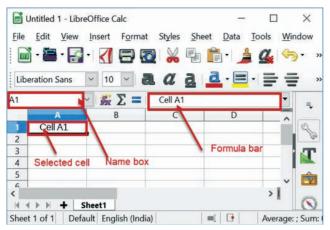


Figure 3.5: Formula bar in a spreadsheet

Whatever you type in, a cell appears in the area called **formula bar** as shown in Figure 3.5.

You also enter or edit data and formula directly into the Formula Bar.

- 4. The **name box** shows the location of the selected cell. The location of the cell is a combination of column and row. For example, A1, where A is the column name and 1 is the row number.
- 5. A **worksheet** is a collection of cells in the form of a grid (a network of lines that intersect each other, making rectangles). When you open a spreadsheet for the first time, you see a blank worksheet with the name 'Sheet1'.
- 6. A **workbook** is a spreadsheet that has one or more worksheets.

# **Practical Exercise**

Run e-learning lesson at http://www.psscive.ac.in/ Employability\_Skills.html. This will include videos and e-content for the above topics. Based upon the e-learning, do the following activity.

#### Initial thinking activity

How do you think a shopkeeper maintains a record of earnings and expenses?

#### Practical group exercise

Run the e-learning lesson to get details on how to run the activity.

#### **Activity 1**

#### Group practice

Working with LibreOffice Calc

#### Material required

Pen or pencil, notebook and computer with LibreOffice Calc, etc.

#### **Procedure**

- Divide the class into groups, depending on the number of computers available. Choose a group leader, who will direct this activity.
- The leader will start LibreOffice Calc on the computer as per the instructions given in the Session.

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- Each member of the group identifies one component of the spreadsheet. The other members should give feedback as to what is correct and what is not. The rest of the group members can also make notes of the components identified and make sure that none is left out.
- Write down the answers to the questions given below in your notebook. Then, run the e-lesson to see these questions.

# **Check Your Progress**

## A. Multiple choice questions

- 1. A \_\_\_\_\_\_ is an electronic document used to store data in a systematic way and perform calculations just like an expense sheet.
  - (a) spreadsheet
  - (b) worksheet
  - (c) workbook
  - (d) name box
- 2. Which of the following functions can be performed with the help of spreadsheets?
  - (1) Maintaining records
  - (2) Creating videos
  - (3) Analysing data
  - (4) Performing financial calculations
  - (5) Writing letters
    - (a) 1, 2, 3, 4, 5
    - (b) 1, 3, 4
    - (c) 1, 3, 5
    - (d) 3, 4, 5
- 3. Match the columns, and then, choose the correct answer.

1.	Grid of horizontal rows and vertical columns	A. Row
2.	Horizontal arrangement of cells numbered 1, 2, 3, 4	B. Workbook
3.	Where rows and columns meet or intersect	C. Columns
4.	Which contains one or more worksheets	D. Cell
5.	Vertical arrangement of cells named A, B, C, D	E. Worksheet

- (a) 1-E, 2-A, 3-B, 4-D, 5-C
- (b) 1-E, 2-B, 3-C, 4-D, 5-A
- (c) 1-A, 2-B, 3-C, 4-D, 5-E
- (d) 1-E, 2-A, 3-D, 4-B, 5-C
- 4. A \_\_\_\_\_ is an arrangement of cells in a horizontal manner.
  - (a) column
- (b) row
- (b) cell
- (c) worksheet

# What have you learnt?

#### After completing this Session, you will be able to

- explain the importance and usage of spreadsheet.
- list different spreadsheet applications.
- open LibreOffice Calc and create a spreadsheet.
- identify components (parts) of a spreadsheet.

# Session 2: Performing Basic Operations in a Spreadsheet

A spreadsheet can be used to perform various functions. Let us see how to enter, edit, delete data and use data functions effectively.

# Steps to enter data

The steps to enter data in a particular cell in a spreadsheet are given below.

1. Click on the cell where you want to enter data as shown in Figure 1. For example, we click cell A1.

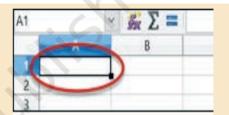


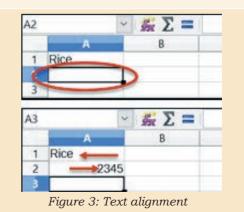
Figure 1: Click on a cell

2. Type text or number. As you type, you can see the data in the Formula Bar as well. Press Enter when you complete typing.



Figure 2: Type text or number

- 3. The cursor is set on the next cell, in this case A2. You can continue entering other data.
- 4. Notice that data in the cell will automatically (by default) be left aligned (near the left edge of the cell) as you have entered text as shown in Figure 3. If you enter numbers, they are right aligned in the cell. Remember that text is aligned to the left of the cell, while number is aligned to the right.



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5. You can enter a formula in a cell by starting with '=' equal-to symbol as shown in Figure 4. This will do the calculations as given and display the results.

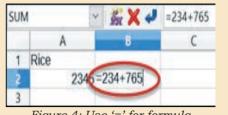


Figure 4: Use '=' for formula

# Type of data

There are three main type of data — text, numbers and formula. Nowadays, it is also possible to enter pictures, audio, video and shapes in a spreadsheet. Let us see what they are used for. Raghu owns a shop. He keeps a record of all items, such as wheat, rice, daal, sugar, etc. He enters the name of the items, date of purchase, quantity purchased, cost price, selling price, etc. Using a spreadsheet, he can use text to enter names, numbers to enter quantity and date to show when an item was purchased.

# Editing data in a cell

If Raghu wants to name the item 'Basmati rice' instead of 'rice', he can edit (correct) it in the spreadsheet.

There are various ways in which one can edit a cell as shown in Figure 3.6.

#### Method 1

- 1. Double click on the cell you want to edit. Then, type additional text in the cell or in the
  - Figure 3.6: Editing text in a cell Formula Bar.



#### Method 2

- 1. Click on the cell you want to edit.
- 2. Correct the text in the Formula Bar.
- 3. Press **Enter**.

2. Press **Enter**.

#### Method 3

(If you want to completely change the text in the cell, then do the following.)

- 1. Click on the cell.
- 2. Type the new text.
- Press Enter.

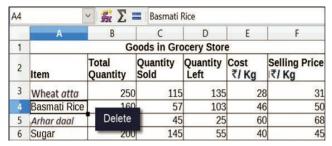


Figure 3.7: Deleting value in a cell

# Deleting data in a cell

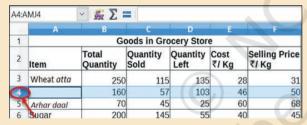
You can delete the value stored in a particular cell as shown in Figure 3.7. The steps to delete data in a cell are as follows.

- 1. Click on the cell.
- 2. Press **Delete** key on the keyboard. This deletes the text entry of that cell making it blank.

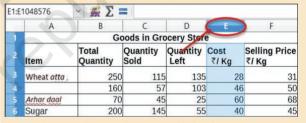
# Selecting multiple cells

Now, if Raghu wants to delete the entire row related to 'basmati rice', he can select the entire row, and then, press '**Delete'**. After selecting multiple cells, a function will be performed on the cells that are selected. When a single cell is selected it is called **active cell**. When a number of cells is selected, it is called **cell range**. There are several ways in which multiple cells can be selected as shown in Table 3.2.

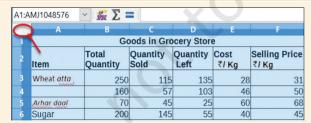
Table 3.2: Selecting multiple cells



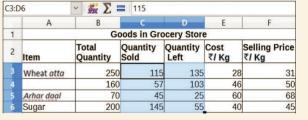
To select an entire row, click the row heading.



To select a full column, click the column heading.



To select an entire worksheet, click the grey rectangle on the upper left corner of the worksheet.



To select a range of cells, click on the starting cell, then hold down the mouse button and drag it till you have selected all the cells you want. Release the mouse button.



To select two or more rows that are not next to each other, select one row and hold down the **Control** key, and then, select the next row as shown in the figure given below.

A5		~ ‰ Σ =	Arhar da	al						
	A	В	С	D	E	F				
1		Go	Goods in Grocery Store							
2	Item	Total Quantity	Quantity Sold	Quantity Left	Cost ₹/ Kg	Selling Price ₹/ Kg				
3	Wheat atta	250	115	135	28	31				
4		160	57	103	46	50				
5	Arhar daal	70	45	25	60	68				
6	Sugar	200	145	55	40	45				

# Saving the spreadsheet in various formats

After entering data, you can save the spreadsheet in the same way as a Notepad or any other word file. Click **File**, and then, **Save** as shown in Figure 3.8. This will open a **Save As** dialog box. Type the **file name** and click **Save**.

The default **Save as type** is ODF Spreadsheet (.ods) but you can save the spreadsheet in other types, such as Microsoft Excel 2003 (.xls) as shown in Figure 3.9.

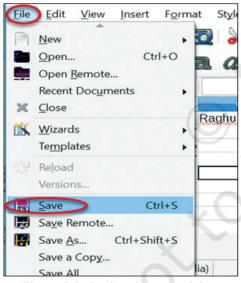


Figure 3.8: Saving the spreadsheet

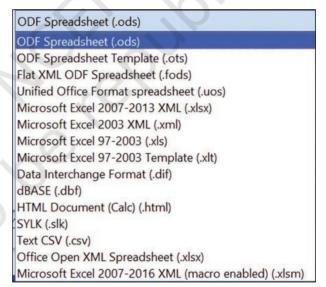


Figure 3.9: Saving in other formats

# Closing the spreadsheet

Once you have saved the data, you can close the spreadsheet by clicking **File**, and then, **Close** as shown in Figure 3.10.



Figure 3.10: Closing the spreadsheet

# Opening a spreadsheet

Click **File**, and then, select **Open**. This will show a dialog box with a list of existing files. Select the one you want to open and click **Open** as shown in Figure 3.11.

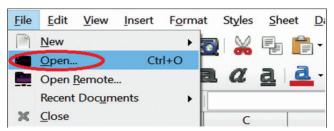


Figure 3.11: Opening a spreadsheet

# Printing the spreadsheet

To print a spreadsheet, you can click **File**, and then, select **Print** from the drop-down or press

**Ctrl+P** on the keyboard as shown in Figure 3.12.

A **Print** dialog box appears. Select the printer, range of pages and number of copies to be printed, and click **OK** as shown in Figure 3.13.



Figure 3.12: Printing the spreadsheet

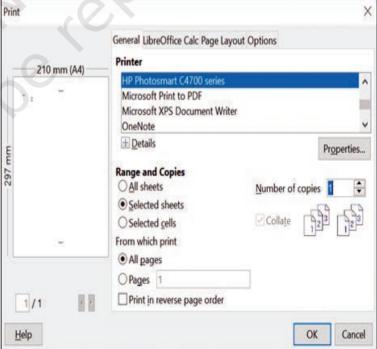


Figure 3.13: Print dialog box

# **Practical Exercise**

Run e-learning lesson at http://www.psscive.ac.in/Employability \_Skills.html. This will include videos and e-content for the above topics. Based upon the e-learning, do the following activity.

#### Initial thinking activity

How do you think a shopkeeper will delete an entry in his record book? How do you think a teacher deletes the name of a student, who has left the school, from the register?

#### Practical group exercise

Run the e-learning lesson to get details on how to run the activity.

#### **Activity 1**

#### **Group practice**

Working with data in LibreOffice Calc

#### Material required

Pen or paper, computer with LibreOffice Calc installed, etc.

#### **Procedure**

- Divide the class into groups, depending on the number of computers available. Select a group leader.
- The leader opens a spreadsheet. Each member enters one's name, roll number and date of birth in the spreadsheet.
- Other members watch and give feedback on what is done correctly and what could be done better.
- Your spreadsheet should look like the table given below.

Name	Roll No.	Date of Birth
Sushil Kumar	123	15/10/01
Meera Rao	124	26/12/03

# **Check Your Progress**

#### A. Multiple choice questions

- 1. The correct order of steps for entering data in a spreadsheet is:
  - (a) type the data, click the cell and press **Enter**.
  - (b) click the cell, type the data and press **Enter**.
  - (c) press **Enter**, click the cell and type the data.
  - (d) click the cell, press **Enter** and type the data.
- 2. What will you do to select an entire worksheet in a spreadsheet?
  - (a) Click the File tab and select properties from the list
  - (b) Click the grey row heading
  - (c) Click the grey rectangle in the upper left corner of the spreadsheet
  - (d) Click the grey column heading

Notes

# What have you learnt?

#### After completing this Session, you will be able to:

- identify type of data.
- open a spreadsheet.
- enter, edit and delete data.
- select multiple cells.
- save and close a spreadsheet.
- print a spreadsheet.

# Session 3: Working with Data and Formatting Text

Data stored in a spreadsheet can be used in calculations, graphical representation and display of information. Let us learn more about working with data.

# Using spreadsheet for addition

Ms Sharma is a teacher and has just started using a computer spreadsheet instead of her manual marks register. She has entered the marks of her students in various subjects as shown in Figure 3.14. Now, she wants to find out the total marks for each student. What should she do?

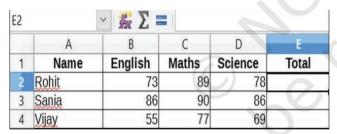


Figure 3.14: Students' marks

To find out the total marks for each student, she needs to add the marks in each subject. The symbol (operator) used for addition in a spreadsheet is '+' (plus). There are various ways to do addition in a spreadsheet. Let us explore them.

#### SUM =73+89+78 C D A B 1 Name English Maths Science Total 78 = 73 + 89 + 78 2 Rohit 89 73 3 Sania 86 90 86 55 4 Vijay 77

Figure 3.15(a): Entering formula

# Adding values directly

To do any calculation in a spreadsheet, you need to use '=' (equal-to) symbol, which tells the spreadsheet that a formula has been entered. Only then the spreadsheet will perform the calculation and display the result.

Ms Sharma can add values directly for each student, i.e., add the numbers directly, such as '=73+89+78' as shown in Figure 3.15(a).

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When you type this in a cell and press **Enter**, the result, i.e., 240 will be displayed. Notice that the formula is displayed in the **Formula Bar** as shown in Figure 3.15(b).

# Adding using cell address

Ms Sharma realised that she had entered the wrong marks for English. Now, she has to re-enter the total formula. That is a lot of work since there are 40 children in her class. Spreadsheet gives you a better way to calculate the total. Instead of using direct numbers in the formula, you can use cell addresses as shown in Figure 3.16(a).

For example instead of entering '=73+89+78', she can enter the cell addresses '=B2+C2+D2'. This will also give the same result. The advantage here is that even if there is a change in the marks, there is no need to type the numbers again in the **Total** field as shown in Figure 3.16(b).

All Ms Sharma needs to do is change the English marks. The total will automatically be calculated again. No change has to be made to the formula.

Notice in Figure 3.16(c), the English score for Rohit has changed from 73 to 66. The total changes to 233 automatically, even though there is no change in the formula i.e., '=B2+C2+D2' as shown in Figure 3.16(c).

E2		· 影 Σ =	=73+89	+78	
	А	В	С	D	E
1	Name	English	Maths	Science	Total
2	Rohit	73	89	78	240
3	Sania	86	90	86	
4	Vijay	55	77	69	6

Figure 3.15(b): Formula displayed in Formula Bar

SUN	1	≤ 場 × 4	<b>■</b> =B2+C2	+D2	
	А	В	С	D	E
1	Name	English	Maths	Science	Total
2	Rohit	73	89	78	=B2+C2+D2
3	Sania	86	90	86	
4	Vijay	55	77	69	

Figure 3.16(a): Formula using cell address

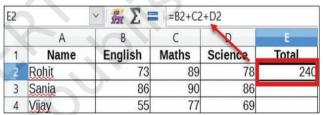


Figure 3.16(b): Total of three cells

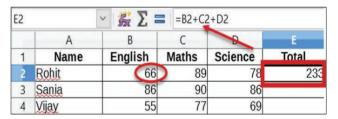


Figure 3.16(c): Total remains the same

# Using mouse to select values in a formula

Now, to write the formula, Ms Sharma has to find out the cell address of each cell with marks and type it. This requires some effort. Spreadsheet makes the task

SUN	Л	✓ 🎇 🗶 📣 =B2+C2+				
	A	В	С	D	E	
1	Name	English	Maths	Science	Total	
2	Rohit	66	89	78	=B2+C2+	
3	Sania	86	90	86		
4	Vijay	55	77	69		

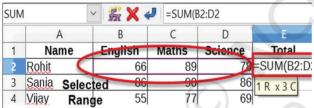
Figure 3.17: Using a mouse to select a cell

easier for Ms Sharma. Using a mouse, she can simply select the cell to be used in the formula instead of typing the cell addresses as shown in Figure 3.17. The steps are as follows.

- 1. Type '=' in the cell where you want to calculate the total.
- 2. Click the cell, which has English marks for Rohit. B2 will appear in the formula.
- 3. Type '+'.
- 4. Click the cell, which has maths marks for Rohit. C2 will appear in the formula.
- 5. Type '+'.
- 6. Click the cell (D2), which has science marks for Rohit.
- 7. Press **Enter.**

This will enter the same formula as before without Ms Sharma having to type the cell addresses for marks scored in each subject. This method is much easier, especially, when there may be many subjects.

Using Sum() function



Figi

	В	С	D	E	Spreadsheet also gives you some
•	English	Matns	Science	Total	functions that make it easier to do
	66	89		=SUM(B2:D	calculations. To add numbers, we have
elec	0.00000	90	80	1 R x 3 C	·
Rang	<b>je</b> 55	77	69		the <b>Sum()</b> function. This helps in adding
gure	3.18(a): U	Ising SUI	M() functio	on	the numbers in separate cells or in a cell
					range. In the example given in Figure

one row, one after the other. As shown in Figure 3.18(a) and 3.18(b), the steps to use the SUM() function are as follows.

3.18(a) and (b), marks for Rohit are in

- 1. Type '=Sum(' in E2 where you want the total.
- 2. Now, click on English marks, i.e., B2, hold the left mouse button and drag till science marks, i.e., D2. This will select the marks for all three subjects.
- 3. Type ')' and press **Enter**.

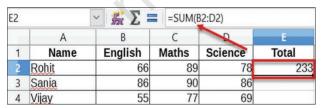


Figure 3.18(b): Steps to use SUM() Function

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This displays the results in cell number E2 and the formula in the **Formula Bar**.

## Copying and moving formula

Now, Ms Sharma has used the **Sum()** function to calculate the total for Rohit. Does she need to do the same steps 40 times for all 40 students? No! Spreadsheets provide a way to copy the formula from one cell to another. The values are automatically adjusted in the

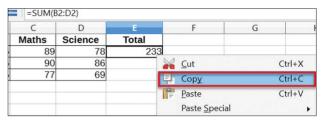


Figure 3.19: Copy formula

new cells. The steps to copy a formula are as follows.

- 1. Click on the cell with the formula.
- 2. Right-click and select **Copy** as shown in Figure 3.19 or press **Ctrl+c** on the keyboard. If you wish to move the formula to a new cell, i.e., delete it from the existing cell, select **Cut** or press **Ctrl+x** on the keyboard.
- 3. Click on the first cell, where you have to copy the formula.
- 4. Keeping the left mouse button down, drag till you reach the last cell, where you want the formula. Release the left mouse button.
- 5. Right-click and select **Paste** as shown in Figure 3.20 or press **Ctrl+v** on the keyboard.
- 6. The formula will be copied to all selected cells. It will calculate the total for each student.

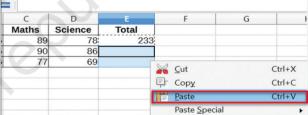


Figure 3.20: Paste formula

Ms Sharma is happy now. Spreadsheets have made her work simple. Now, all she has to do is enter the marks for all her students for each subject and the rest will be done by the spreadsheet. And, if some of the marks change, she does not have to do the calculations all over again.

#### Need to format cells and content

Geeta makes very neat notes in her copy. She underlines the headings and uses a black pen to write the sub-topics. Sometimes, she writes important words in capital letters to make them stand out. She even has a neat rough work column on the side. Everybody wants her notes as they are easy to read and understand, and the important points are clearly highlighted.

Electronic spreadsheets have many options to make your content look neat and and easy to read. This is called 'formatting'. There are many ways in which you can format the content in a spreadsheet. Let us work with some of them.



Figure 3.21: Change font

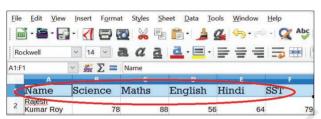


Figure 3.22: New font and size

# Change text style and font size

In case you want to give a different style or a bigger size to the heading, you can change the text style using the **Font** drop-down as shown in Figure 3.21.

You can choose the style you like from the drop-down. The text in all selected cells will change.

Similarly, you can change the size of the text from from the font-size drop-down.

As you can see in Figure 3.22, the font and size of the heading have changed.

# Align (arrange) text in a cell

Sometimes, we see that text is placed in the centre of the cell. How does this happen? In a spreadsheet, you can position the text in a cell to the left, right or center. This is the alignment feature of spreadsheet.

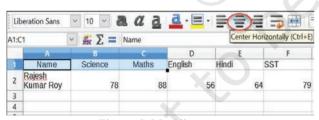


Figure 3.23: Align text

You can use the given icons on the **Tool Bar** to align the text.

In Figure 3.23, the text in cell A1, B1 and C1 has been aligned to the centre. You can see that only the selected cells have been aligned to the center.

# Highlight text

We make headings of our documents and tables bigger and bolder than the rest of the text to make them stand out. We also underline important words or italicise them so that they, too, stand out. As shown in Table 3.3, there are many ways in which we can highlight the text in a spreadsheet.

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Table 3.3: Highlighting text

Action	Shortcut keys	Tool Bar icon
To make text bold	Ctrl+b	Liberation Sans V 10
To underline text	Ctrl+u	A1:C1  A  B  Underline (Ctrl+U)  A  Rajesh Kumar Roy  Ray  A  B  A  B  A  B  A  B  C  B  C  C  A  B  C  C  A  B  C  C  A  B  C  C  A  B  C  C  C  A  B  C  C  C  A  B  C  C  C  C  C  C  C  C  C  C  C  C
To make text italic or slanting	Ctrl+i	A1:C1  A  B  Name  Science  Maths  English  Rajesh Kumar Roy  78  88  56

# **Practical Exercise**

Run the e-learning lesson at http://www.psscive.ac.in/ Employability\_Skills.html. This will include videos and e-content for the above topics. Based upon the e-learning, do the following activities.

#### Initial thinking activity

Why do you think we need to format content in a spreadsheet?

#### Practical group exercise

Run the e-learning lesson to get details on how to run the activity.

#### **Activity 1**

#### **Group practice**

Formatting spreadsheets in LibreOffice Calc

#### Material required

Pen, computer with LibreOffice Calc installed, etc.

#### NOTES

#### **Procedure**

- Divide the class into groups, depending on the number of computers. Choose a leader, who will direct the activity.
- The leader creates a table as shown in Figure 1. One member center aligns the Roll No. and Name columns.
- Another member makes all column headings bold. Now, some other member underlines the column headings.
   Another member can increase the size of column B to make the full name visible.

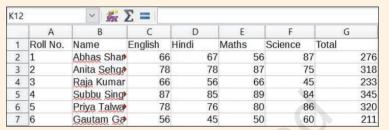


Figure 1: Activity 1 sample

#### **Activity 2**

#### Group practice

Basic calculations in LibreOffice Calc

#### **Material required**

Pen, paper, computer with LibreOffice Calc installed, etc.

#### **Procedure**

- Divide the class into groups, depending on the number of computers available. Each group will select a leader.
- The leader opens a spreadsheet. As shown in Figure 1, each member enters one's roll number, name, marks obtained in English, Hindi, maths and science, and calculates the total marks in column G.
- Each member can use a different method to calculate the total. Other members watch and give feedback on what was done correctly and what could have been done better. Your spreadsheet should look like the table given below.

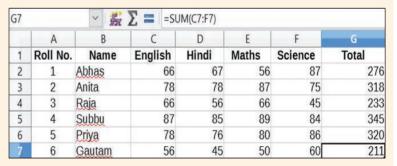


Figure 1: Activity 2 sample



# **Check Your Progress**

#### Notes

#### A. Multiple choice questions

- 1. What is the default alignment of numbers in a cell?
  - (a) Left aligned
  - (b) Right aligned
  - (c) Center aligned
  - (d) Randomly aligned
- 2. "By default, the text in a cell is left aligned." State whether this is true or false.
  - (a) True
  - (b) False
- 3. What is the shortcut key to underline text in a spreadsheet?
  - (a) Ctrl+b
  - (b) Ctrl+i
  - (c) Ctrl+1
  - (d) Ctrl+u
- 4. Which of the following features is used to perform addition in spreadsheets?
  - (a) Format option
  - (b) Charts
  - (c) Graphs
  - (d) Formula
- 5. Which of the following signs define a formula?
  - (a) +
  - (b) /
  - (c) =
  - (d) +

# What have you learnt?

#### After completing this Session, you will be able to:

- add values directly in a spreadsheet.
- · add values using formulas.
- add values using Sum() function.
- align (arrange) text in a cell.
- fit text into a cell.
- · highlight the text.

# Session 4: Advanced Features

#### IN SPREADSHEET

Let us take an example of 500 students in a school. Now, if the teacher wants to find the marks of a particular student, for example 'Seema', she will have to look through the entire list. It is a difficult process and may

take a long time as the teacher has to go through all 500 names. Now, if she arranges the names alphabetically, i.e., putting names starting with 'A' first, then names with 'B', and so on, finding a name will be easier. One knows that the name 'Seema', starting with the letter 'S', will come in the middle. This sorting or arrangement of words in order can help one find a particular word or name easily.

	A	В	C	D	E	F	G
1	Name	Science	Maths	English	Hindi	SST	TOTAL
2	Rajesh Roy	78	88	56	64	79	365
3	Zahira	45	56	78	45	78	302
4	Anupa	45	56	65	67	87	320
5	Sania	75	64	73	87	54	353
6	Dilip	15	83	68	56	65	287
7	Punit	84	72	76	45	74	351
8	Shikhar	81	93	88	37	85	384
9	Farida	65	65	34	85	34	283
10	Anshu	84	48	98	94	56	380
11	Bharti	45	39	55	57	77	273
12	Seema	49	45	44	55	44	237

Figure 3.24: Unsorted data

# Sorting data

take another Let example. Ms Sharma has all her students' subject marks and their totals in a spreadsheet as shown in Figure 3.24. If she wants to find out three students with the highest marks, she will have to search the entire list. This is even more difficult if there are 100 or more, students, for example, in the entire batch or school.

To make it easy, she can sort the data on the total marks so that she knows the rank of the students in the class. The steps to sort data are as follows.

- 1. Select all rows and columns that have to be sorted as shown in Figure 3.25.
- 2. Click on **Data**, and then, select **Sort** as shown in Figure 3.26.

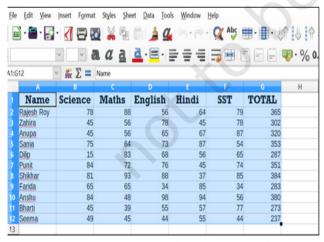


Figure 3.25: Select data to be sorted

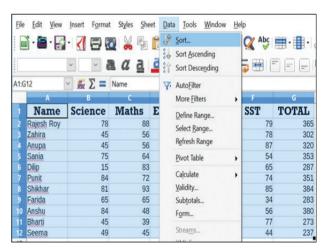


Figure 3.26: Click on Data, and then, select Sort



- 3. This will give a **Sort** dialog box as shown in Figure 3.27. Click on **Sort Key 1** and select total from the drop-down. By default the order is **Ascending**, which means from the lowest to the highest. We will change it to **Descending**. This will sort the data in the total field.
- 4. Click on OK.
- 5. As shown in Figure 3.28, the data will get rearranged in the entire list and the name of the student with the highest total marks will appear at the top, and then, the student with the next highest marks, and so on. Therefore, the names of top three students will appear in the beginning of the list and the name of the student with the lowest total marks will appear last.

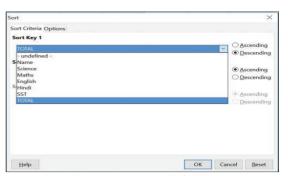


Figure 3.27: Sort dialog box

	A	В	C	D		F	G
1	Name	Science	Maths	English	Hindi	SST	TOTAL
2	Shikhar	81	93	88	37	85	384
3	Anshu	84	48	98	94	56	380
4	Rajesh Roy	78	88	56	64	79	365
5	Sania	75	64	73	87	54	353
6	Punit	84	72	76	45	74	351
7	Anupa	45	56	65	67	87	320
8	Zahira	45	56	78	45	78	302
9	Dilip	15	83	68	56	65	287
10	Farida	65	65	34	85	34	283
11	Bharti	45	39	55	57	77	273
12	Seema	49	45	44	55	44	237

Figure 3.28: Sorted data

# Filtering data

Figure 3.29 has students from different sections and Ms Sharma wants to see the marks of students only from Class XII-A, what will she do?

To do this, Ms Sharma can use another feature of spreadsheet — 'Filters'.

The steps to apply filter to a table are as follows.

- 1. Click on the AutoFilter icon on the Tool Bar.
- 2. This will put filters at the top of each column as shown in Figure 3.30.
- 3. Click on the filter for 'class' column.
- 4. The drop-down will show a list of all the values in that column, for example, Class XII-A and XII-B.
- 5. By default, all values are checked or selected.

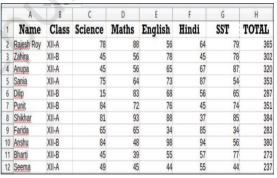


Figure 3.29: Unfiltered data

9	A	В	C	D	E	F	G	Н
1	Name -	Class -	Scienc -	Maths -	Englis -	Hindi -	SST -	TOTAL -
2	Rajesh Roy	XII-A	78	88	56	64	79	365
3	Zahira	XII-B	45	56	78	45	78	302
4	Anupa	XII-A	45	56	65	67	87	320
5	Sania	XII-A	75	64	73	87	54	353
6	Dilip	XII-B	15	83	68	56	65	287
7	Punit	XII-B	84	72	76	45	74	351
8	Shikhar	XII-A	81	93	88	37	85	384
9	Farida	XII-A	65	65	34	85	34	283
10	Anshu	XII-B	84	48	98	94	56	380
11	Bharti	XII-B	45	39	55	57	77	273
12	Seema	XII-A	49	45	44	55	44	237

Figure 3.30: Filters added



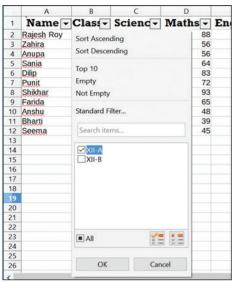


Figure 3.31: Selecting Class XII-A

- 6. If you want to see the data of students only from Class XII-A, uncheck Class XII-B as shown in Figure 3.31.
- 7. Click on **OK**.
- 8. Data of students only from Class XII-A will be dispalyed as shown in Figure 3.32.

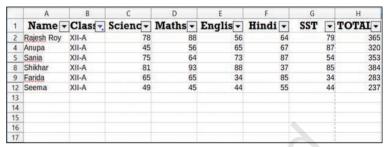


Figure 3.32: Filtered data

# Protecting spreadsheet with password

If Ms Sharma is sharing the computer with other teachers and staff, she may want to protect her

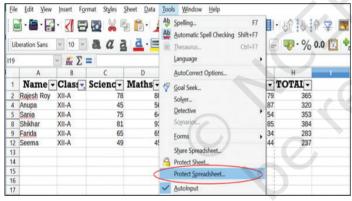


Figure 3.33: Protecting spreadsheet

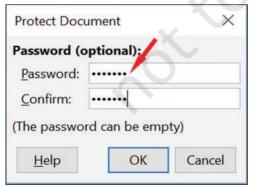


Figure 3.34: Protect Document dialog box

data. She may not want anyone else to open and make changes to her work. She can do this by protecting her spreadsheet using a password. The steps to protect a spreadsheet are as follows.

- 1. Click on **Tools** and select **Protect Spreadsheet** as shown in Figure 3.33.
- 2. A **Protect Document** dialog box appears as shown in Figure 3.34.
- 3. Type in a **password**.
- 4. Type the same password in the **Confirm** textbox.
- 5. Click on **OK**.
- Now, when you close the file and open it again, it will ask for the password. Remember this password so that you can open the file.



Another way of protecting a spreadsheet is as follows.

- 1. Click on **File**, and then, **Save As**.
- 2. A **Save As** dialog box will appear as shown in Figure 3.35.



Figure 3.35: Save As dialog box

- 3. Type the file name and click **Save with password**.
- 4. Click on Save.
- 5. A **Set Password** dialog box appears as shown in Figure 3.36.



Figure 3.36: Set password dialog box

- 6. Type a password in the first textbox, and then, type the same password in the **Confirm** textbox.
- 7. Click on **OK**.
- 8. Now, when you try to open the file, it will ask for a password as shown in Figure 3.37.
- 9. Type the password and click on **OK**.

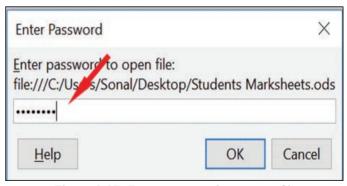


Figure 3.37: Enter password to open a file



#### Notes

# Practical Exercise

Run the e-learning lesson at http://www.psscive.ac.in/ Employability \_Skills.html. This will include videos and e-content for the above topics. Based on the e-learning, do the following activity.

#### Initial thinking activity

Why do you think we need to sort content in a spreadsheet?

#### Practical group exercise

Run the e-learning lesson to get details on how to run the activity.

#### **Activity 1**

#### **Group practice**

Sorting data in LibreOffice Calc

#### Material required

Pen or pencil, computer with LibreOffice Calc, etc.

#### **Procedure**

- Divide the class into groups, depending on the number of computers. Choose a leader, who will direct the activity.
- Open a new workbook. Enter your monthly expenses as shown in Figure 1. Sort the data in alphabetical order. Filter data to show expenses above ₹100.

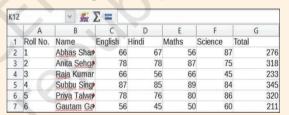


Figure 1: Activity 1 sample

# **Check Your Progress**

#### A. Multiple choice questions

- 1. Which menu option will you use to sort data?
  - (a) Tools
  - (b) Data
  - (c) Format
  - (d) View
- 2. Mr Gupta has a spreadsheet with a list of 500 items in his shop. A customer comes and asks for a particular item. How should he arrange the data so that he can find that item fast? What would Mr Gupta do? He will:
  - (a) apply filter.
  - (b) sort the data.
  - (c) use password.
  - (d) format data.



- 3. Mr Verma shares the computer in his office with other colleagues. He wants to make sure no one sees the financial data he saves on the computer. What should he do?
  - (a) Lock the computer in a cupboard
  - (b) Change the password of his computer so that no one can use it
  - (c) Apply password to the financial data sheet
  - (d) Leave it as it is and hope that no one will open it

# What have you learnt?

#### After completing this Session, you will be able to:

- · sort data.
- · add filters.
- protect spreadsheet with a password.

# Session 5: Presentation Software

Ms Sharma wants to explain water cycle to her students. Mr Chaudhary wants to explain the working of a product to his clients and Dr Suman wants to give a lecture on her new research. All these people need to make an impact on their audience. They can use handmade charts or printed slides or make a digital presentation using a computer and presentation software.

Presentation software is being widely used to make digital presentations. It has many advantages, which are as follows.

- 1. They are interesting as they have features like images, videos, animation and music.
- 2. Making changes in digital presentations is easy.
- 3. A digital presentation can be shown to a much larger audience by projecting on a screen.
- 4. The presentation can be printed and distributed to the audience.

#### Presentation software available

There are a number of presentation software available, such as

- 1. LibreOffice Impress
- 2. Microsoft Office PowerPoint

Notes

- 3. OpenOffice Impress
- 4. Google Slides
- 5. Apple Keynote

Most features in all these software are same. We will be discussing and using LibreOffice Impress to create presentations in this Session as it is a free and open software.

# Steps to start LibreOffice Impress

- 1. First, you must ensure that LibreOffice Impress is installed on your computer.
- 2. Type 'LibreOffice Impress' in the search bar of Windows.
- 3. Select LibreOffice Impress from the search results as shown in Figure 3.38(a).
  - 4. LibreOffice Impress will open. Cancel the 'Select a template' dialog box.
  - 5. A blank presentation will open [Figure 3.38(b)].

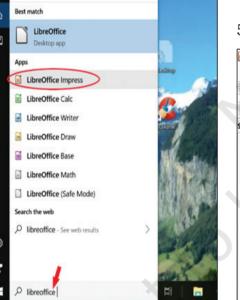


Figure 3.38(a): Select LibreOffice Impress from the search results

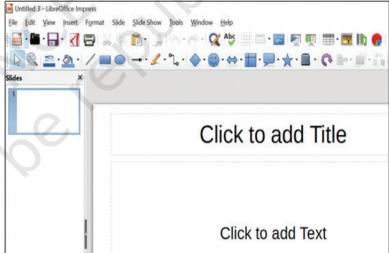


Figure 3.38(b): Open LibreOffice Impress

# Adding text to a presentation

By default, there are two textboxes in the first slide. The top one is for the title and the lower (bigger) one for other details. We can click on the title box and type in a title. Similarly, we can click on the lower box and type in some details as given in Figure 3.39.

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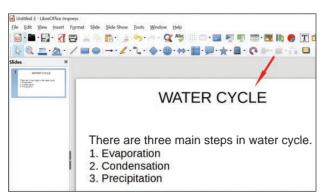


Figure 3.39: Adding text to a slide

In this way, we can start using LibreOffice Impress to make a presentation.

## **Practical Exercise**

Run the e-learning lesson at http://www.psscive.ac.in/ Employability\_Skills.html. This will include videos and e-content for the above topics. Based upon the e-learning, do the following activity.

#### Initial thinking activity

How do you make your projects?

#### Practical group exercise

Run the e-learning lesson to get details on how to run the activity.

#### **Activity 1**

#### Group practice

Creating presentation in LibreOffice Impress

#### Material required

Pen, notebook, computer with LibreOffice Impress, etc.

#### **Procedure**

- Divide the class into groups, depending on the number of computers.
- Choose a leader, who will direct the activity.
- Start LibreOffice Impress and create a new presentation with the title 'Advantages of using the Internet'.

# Check Your Progress

#### A. Multiple choice questions

- 1. You have a summer vacation project on how to make biogas. You have done a lot of research, clicked pictures of biogas plants and taken videos of people, who use biogas. Now, you have to make a presentation before the class. What would you use?
  - (a) Chart paper
  - (b) Word document
  - (c) Presentation software
  - (d) Spreadsheet

Information and Communication Technology Skills

#### NOTES

- 2. What do you need to install on your computer to be able to run Impress?
  - (a) Google
  - (b) Microsoft Office
  - (c) LibreOffice
  - (d) Apple iOS
- 3. How many textboxes does the first slide of LibreOffice Impress have by default?
  - (a) 1
  - (b) 2
  - (c) 3
  - (d) 4

# What have you learnt?

#### After completing this Session, you will be able to:

- describe the advantages of digital presentation.
- list various presentation software.
- list features of a presentation.
- · create a new presentation.

# Session 6: Opening, Closing, Saving and Printing a Presentation

In this Session, we will learn about opening, closing, saving and printing a presentation.

# Steps to save a presentation

A digital presentation can be saved as a file on the computer. This can be opened later, viewed, edited, shared with friends and colleagues, and printed. It is important to save the presentation several times while working so that you do not lose data in case the computer shuts down or there is a power cut.

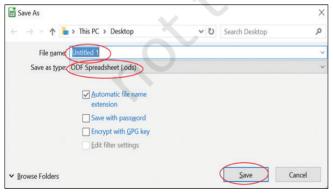


Figure 3.40: 'Save As' dialog box

The steps to save a presentation for the first time are as follows.

- 1. Click on **File**.
- 2. Select **Save As** or **Save** from the drop-down. This displays a **Save As** dialog box as shown in Figure 3.40.
- 3. You can select a folder where you want to save the file, for example **Desktop**.



- 4. By default, the File name is 'Untitled#' (# is a number). You can change it to the name of your choice.
- 5. The default **Save As type** is .ods. You can select other file types from the **Save As type** drop-down. You can save the file as MS Excel or HTML or text file.
- 6. Click on **Save**.

This will save the presentation on the computer. Later while working, you can simply click **File>Save** or press **Ctrl+s** on the keyboard to save the presentation.

# Steps to close a presentation

The steps to close a presentation are as follows.

- 1. Click on **File**.
- 2. Select **Close** from the drop-down.
- 3. If you have not saved the changes before closing the file, it will prompt you with a 'Save Document?' dialog box as shown in Figure 3.41. You can decide whether you want to save or not or cancel.

# Save Document? Save changes to document "Water Cycle.odp" before closing? Your changes will be lost if you don't save them. Save Don't Save Cancel

Figure 3.41: Save Document dialog box

# Steps to open a presentation

The steps to open a presentation are as follows.

- 1. Open LibreOffice Impress.
- 2. Click on **File**.
- 3. Then, select **Open** from the drop-down.
- 4. This will display the **Open** dialog box as shown in Figure 3.42.
- 5. Browse and select the folder where your file is saved, for example **Desktop**.

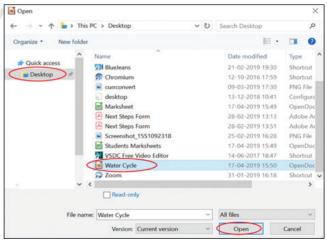


Figure 3.42: Open dialog box

6. Then, select the file, for example Water Cycle.

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#### Notes

- 7. Click on **Open**.
- 8. This will open the 'Water Cycle.ods' in LibreOffice Impress.

# Steps to print a presentation

Before you try to print a file, please make sure that a printer is connected to the computer. The steps to print a presentation are as follows.

- 1. Click on **File**.
- 2. Select **Print** from the drop-down or you can press **Ctrl+p** on the keyboard.
- 3. A **Print** dialog box is displayed.
- 4. A printer attached to the computer is displayed in the dialog box.
- 5. Select the **number of copies** you want to print.
- 6. Select **All**, if you want to print all slides.
- 7. Select **Slides**, if you want to print few of them and provide the slide numbers.
- 8. Click on **OK**.

## **Practical Exercise**

Run the e-learning lesson at http://www.psscive.ac.in/ Employability\_Skills.html. This will include videos and e-content for the above topics. Based on the e-learning, do the following activity.

#### Practical group exercise

Run the e-learning lesson to get details on how to run the activity.

#### **Activity 1**

#### Group practice

Working on a presentation in LibreOffice impress.

#### **Material required**

Computer with LibreOffice Impress, pen, notebook, etc.

#### **Procedure**

- Divide the class into groups, depending on the number of computers. Each group will perform the following activities.
  - Save a presentation file by the name 'Water Cycle Project'
  - Close the file
  - Open the file again
  - Print the presentation
- Make sure that each student in the group gets a chance to perform at least one activity. Other members can watch and give feedback on what was done correctly and what could be improved upon.



# **Check Your Progress**

#### Notes

#### A. Multiple choice questions

- 1. Which is the correct step to save a presentation?
  - (a) File>Save As>Type file name>Save
  - (b) File>Open>File name>Open
  - (c) File>Template>Save as Template
  - (d) File>Close>Save>OK
- 2. Which is the correct step to close a presentation?
  - (a) File>Save As>Type file name>Save
  - (b) File>Exit
  - (c) File>Close
  - (d) File>Export
- 3. Which is the correct step for printing a presentation?
  - (a) File>Print
  - (b) File>Print>Handout
  - (c) File>Print>Handout>OK
  - (d) File>OK

# What have you learnt?

#### After completing this Session, you will be able to:

- save a presentation.
- close a presentation.
- open a presentation.
- print presentation slides.

# Session 7: Working with Slides and Text in a Presentation

Let us assume you have to make a presentation about a product in your office. The time assigned for the same is five minutes. If you highlight the important points in the presentation, you can easily depict important information in a short span. Let us look at how we can make our presentation more effective.

# Adding slide to a presentation

Ms Sharma listed all three steps of Water Cycle in the first slide. Now, she wants to explain each step. But it is not a good idea to put more information on one page. This will make the text jumbled, and difficult to read and understand.

Ms Sharma can add a new slide. Slides are like new pages, which are added to separate different topics in a presentation. Ms Sharma can add one slide each for

evaporation, condensation and precipitation, and give more details related to each topic in three different slides. To add a new slide, do the following.



Figure 3.43: Adding a New Slide

- 1. Click on **Slide**.
- 2. Select **New Slide** from the drop-down as shown in Figure 3.43.
- 3. You can also press **Ctrl+M** on the keyboard.
- 4. This will add a blank **New Slide** to the presentation.
- 5. The layout or arrangement of textboxes, etc., will be similar to the previous one.



Figure 3.44: Delete Slide

# **Deleting slides**

The steps to delete a slide are as follows.

- 1. Select the slide that you want to delete.
- 2. Click on Slide.
- 3. Select **Delete Slide** from the drop-down as shown in Figure 3.44.
- 4. The selected slide will be deleted.
- 5. You can press '**Del**' key on the keyboard to delete the selected slide.

# Adding and formatting text

The default layout of a LibreOffice Impress slide has two textboxes — one for the title and other for text. You can add text by simply typing on the keyboard.

If you have a blank slide with no textbox, you can insert a textbox using the option **Insert>Textbox** as shown in Figure 3.45. You can make this textbox of any size, and then, enter the text.



Figure 3.45: Formatting text

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You can format the text in a presentation to make it look better or attractive.

There are many font styles available to change the way a text appears. Click on the **Font Style** drop-down to select a different style. This will change the way the text is written (Figure 3.45).

You can also change the size of the text by clicking on the **Font Size** drop-down and select the size (for example, 8, 12, 14, 22, etc.). The font size of the title is increased to make it stand out.

# Highlighting text — bold, underline, italic

To highlight a text in LibreOffice, you can make it bold, underlined or italic, depending on the requirement.

First, select the text that has to be highlighted. Then, hover over the given icons in the **Properties** tab as shown in Figure 3.46. Select the icon required to perform the desired function, i.e., making it bold, italic, underlined or strikethrough.

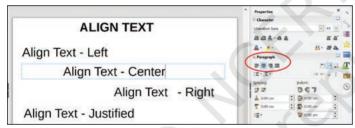


Figure 3.46: Highlighting text

# Aligning text — left, right, center, justified

The text can be aligned either left, right, center or justified. Using the **Paragraph** option in the **Properties** tab as shown in Figure 3.47, the text can be aligned.



Figure 3.47: Aligning text

'Left or right aligned' means that text will be aligned to the left or right margin, respectively. 'Center' aligns

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the text to the center of the page. 'Justify' aligns the text to the right and left margins.

# Changing text colour

You can make the presentation even more interesting by giving different colours to the text.

The Font Color drop-down gives various colours from which you can choose and change the colour of the text as shown in Figure 3.48. Besides the **Font Color** drop-down, there is a **Highlight Color** drop-down. If you select a colour from the Highlight Color drop-down, it will change the background colour of the text.



Figure 3.48: Changing text colour

In this way, you can make the presentation interesting and meaningful.

## **Practical Exercise**

Run the e-learning lesson at http://www.psscive.ac.in/ Employability\_Skills.html. This will include videos and e-content for the above topics. Based on the e-learning, do the following activity.

#### Practical group exercise

Run the e-learning lesson to get details on how to run the activity.

#### **Activity 1**

#### Group practice

Working with font styles, types in LibreOffice Impress

#### Material required

Computer with LibreOffice Impress, notebook, pen, etc.

#### **Procedure**

- Divide the class into groups, depending on the number of computers. Each group will perform the following activities.
  - 1. Insert a new slide.
  - 2. Type 'LibreOffice Impress'.
  - 3. Change the font to 'Open Sans'.
  - 4. Colour the text white.
  - 5. Colour the background green.



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- 6. The text should appear as given in Figure 1.
- 7. Now, type 'Google'.





Figure 1: Activity 1 sample 1

- 8. Change the font to 'Bookman Old Style'.
- 9. Change the size to 54.
- 10. Colour the letters as given in the Figure 2.

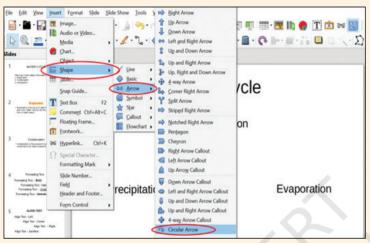


Figure 2: Activity 1 sample 2

Make sure each student in the group gets a chance to perform this activity. Other members can watch and give feedback on what was done correctly and what could be improved upon.

# **Check Your Progress**

#### A. Multiple choice questions

- 1. Which menu option do you use to insert a slide?
  - (a) Edit
  - (b) Insert
  - (c) Slide
  - (d) Tools
- 2. How will you, usually, align the title of a slide?
  - (a) Left
  - (b) Right
  - (c) Center
  - (d) Justify
- 3. Which option will you use to change the colour of the text?
  - (a) Font Color
  - (b) Font
  - (c) Highlight Color
  - (d) Format

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# What have you learnt?

#### After completing this Session, you will be able to:

- add a slide to a presentation.
- delete a slide in a presentation.
- enter and edit text in a presentation.
- format text in a presentation.

# Session 8: Advanced Features used in Presentation

There are various advanced features used in a digital presentation. The use of graphics, charts and images can make the presentation more meaningful.

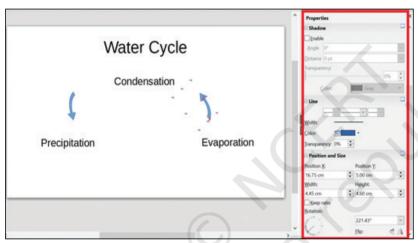


Figure 3.49: Inserting shape in a slide

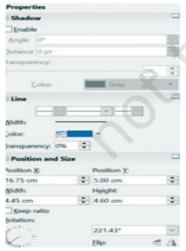


Figure 3.50: Using Properties tab

# Inserting shapes in presentation

You may want to use arrows to show the flow of a process in a presentation. For example, if you want to show how Water Cycle works — you can use arrows. LibreOffice provides numerous shapes, such as lines, square, circle, arrows, symbols, etc., that can be inserted into slides.

As shown in Figure 3.49, to insert an arrow, you must click on **Insert**, and then, select **Shape**. This has several options. Choose **Arrow** to see different types of arrow. Select the one required for the presentation, for example, '**Circular Arrow**'. In this way, you can select any shape you want.

Once a shape is inserted in a slide, you can use the **Properties** tab to make changes to the properties of the shape, such as colour, size, position, direction, etc.

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# Inserting clipart and images in presentation

A picture speaks a thousand words. We use a lot of images in a presentation to make it simple and interesting. The steps to insert a clipart or an image are as follows.

- 1. Click on **Insert** from the menu.
- 2. Select **Image** as shown in Figure 3.51.
- 3. An **Insert Image** dialog box appears as shown in Figure 3.52.
- 4. Browse through folders and select the image you want to use.

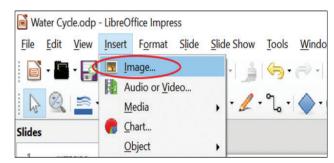


Figure 3.51: Select Image

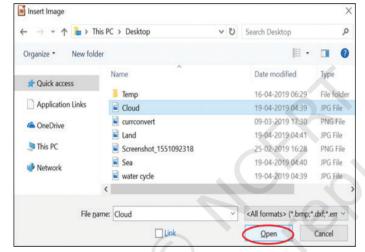


Figure 3.52: Insert Image dialog box

## 5. Click on **Open**.

In this way, you can insert images in your presentation slides and make it more interesting.

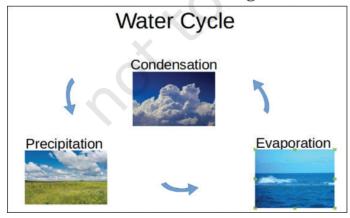


Figure 3.53: Images inserted in a slide

# Changing slide layout

The default layout of a LibreOffice Impress slide contains one textbox for the title and one for content. Layout

Water Cycle

• Steps:

- Sun heats the water

- Steam/Water vapour

- Wind carries clouds

- Rain or snow

- Water flows into sea

Figure 3.54: Selecting the desired layout from the Layouts tab

helps to arrange the slide content in an organised way. However, you can change the slide layout as per the requirement.

In case, you want to insert an image of water cycle on one side and give the steps on the other, you can select a layout with one title and two boxes. You can do this by simply selecting the slide, and then, selecting the desired layout from the Layouts tab as shown in Figure 3.54. Having a layout helps to align the content in the desired way.

## **Practical Exercise**

Run the e-learning lesson at http://www.psscive.ac.in/ Employability\_Skills.html. This will include videos and e-content for the above topics. Based upon the e-learning, do the following activity.

#### Practical group exercise

Run the e-learning lesson to get details on how to run the activity.

#### **Activity 1**

#### Group practice

Working with slides in LibreOffice Impress

Time: 20 minutes

#### Material required

Computer with LibreOffice Impress, notebook, pen, etc.

#### **Procedure**

- Divide the class into groups, depending on the number of computers. Each group will perform the following tasks.
  - Set the layout of the slide to Title and four content.
  - Insert two different shapes on the left, for example, star and diamond
  - Insert an image of star and diamond on the right.
  - Your slide should appear similar to the one given in Figure 1.



Figure 1: Activity 1 sample

Make sure that each student in the group gets a chance to perform at least one task. Other members can watch and give feedback on what was done correctly and what could be improved upon.

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# **Check Your Progress**

#### Notes

#### A. Multiple choice questions

- 1. Which menu option will you click on to insert shapes and images?
  - (a) Format
  - (b) Tools
  - (c) Edit
  - (d) Insert
- 2. What are the steps to insert a square shape in a presentation?
  - (a) Insert > Shape> Line> Square
  - (b) Tools > Shape> Line> Square
  - (c) Insert > Shape> Basic > Square
  - (d) Format > Text > Basic> Square
- 3. What happens when you change the layout of a slide?
  - (a) The format of the text changes
  - (b) New slide is inserted
  - (c) The arrangement of content (text, images, shapes) changes
  - (d) The title gets aligned to the center of the slide

# What have you learnt?

#### After completing this Session, you will be able to:

- insert shapes.
- · insert clipart and images.
- change slide layout.

#### FURTHER READINGS

- https://edu.gcfglobal.org/en/powerpoint2016/inserting-pictures/1/
- https://www.gcflearnfree.org/excel2016/getting-startedwith-excel/1/
- https://www.webucator.com/tutorial/learn-microsoft-excel/entering-data-microsoft-excel-worksheets.cfm
- https://www.gcflearnfree.org/excel2013/formattingcells/1/
- https://www.youtube.com/watch?v=sJqfvgD\_qMI
- https://edu.gcfglobal.org/en/excel2013/filtering-data/1/
- https://edu.gcfglobal.org/en/powerpoint2016/creating-and-opening-presentations/1/
- https://edu.gcfglobal.org/en/powerpoint2007/viewing-and-printing-slides/1/
- https://edu.gcfglobal.org/en/powerpointxp/formattingtext/1/